

## Risk reporting

Why can't they ever get it right?

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- What should journalists report about risks?
- Is it better to ignore an uncertain risk and avoid panic, or to report it anyway?
- If scientists can't figure out a risk, how can journalists?

Almost everyone seems to complain about journalistic reporting of risks. Scientific experts complain that the science is inaccurate or incomplete, or else that it is presented as being more certain than it is. Public officials complain that unnecessary panic is being created, or else that people are not being warned adequately. Advocacy groups complain that particular issues or problems in which they have an interest are not getting enough attention; corporations complain that their technologies and products are represented as being too risky – and are getting too much attention. Media consumers complain that they cannot figure out what they should and should not be concerned about, and that frequent reversals in interpretation of the scientific evidence confuse them even more. Journalism scholars complain that media coverage is too dependent on 'official sources' for their views, and that science journalism in particular is obsessed with immediate 'breakthroughs' in science at the expense of longer term trends and developments.

Risk is not only a technical concept, it is also a social concept. In fact, some social theorists (see, for example, Beck 1992) have proposed that post-industrial societies can be reconceptualized as 'risk societies' in which – fundamental problems of daily survival having been, for many people, already addressed – avoidance of risk is the new organizing principle. Risks come from many elements unique to such societies – from the technologies of modernization (in manufacturing, energy production, transportation); from associated environmental contamination; from mechanized, large-scale agricultural production; from changing diets and lifestyles in the face of our vastly improved but still incomplete knowledge of heredity and nutrition;

from violent crime associated with these mobile, competitive, urbanized societies; from the diseases of aging now that many major infectious diseases that used to kill people at younger ages are largely under control; from war in a globalized economic order. Older risks from natural disaster remain, partially mitigated (and occasionally exacerbated) by newer technologies such as earthquake-proof buildings and bridges and early warning systems for tornadoes and hurricanes.

Risks, clearly, are all around us. A world in which journalists ignored risks would be unacceptable. But how should risks be reported, and is it possible to report them without sensationalizing them and still have stories that will attract readers and audiences? Will too much risk reporting cause people to turn away from an 'overload' of threatening messages? Nearly everyone seems to agree that it is part of the news media's job in contemporary society to alert the citizenry to potential risks, even though there is little or no consensus about how this should be done. The classical list of media functions originally proposed by Lasswell (1948) included environmental surveillance, correlation of societal response, and transmission of heritage. Clearly, risk has been part of the job for some time.

Risk reporting might most clearly constitute surveillance, the issuing of alerts and warnings about situations that people may see as threatening. This can also work in reverse. When I open my local paper and see little serious news of interest beyond the immediate community, I am somewhat reassured because I sense that if a major national or global catastrophe was imminent it would surely have displaced the news of our city council meetings, the construction of a golf course or shopping area, and the hiring of a new principal for the junior high school. I can depend on the news media, even a local small-town paper, to bring me news of most major risks, although there is always a chance local interests might suppress a report or the journalists' sophistication not be up to the task. Will the golf course change stream run-off patterns and create drainage problems? Is the city acting responsibly in setting aside new land for a garbage dump rather than considering alternatives such as recycling? Is the new principal going to address the number of unvaccinated students in our public schools? I am not so sure these things will be covered as they should be, but I have a fair confidence major immediate threats will be identified.

Of course, correlation of societal response and the transmission of heritage, including the values we bring to bear on understanding and interpreting a risk, are more complex. Announcements of what a government agency is doing in response to an earthquake or hurricane, for example, are quite prominent in news accounts (Hornig [Priest] *et al.*, 1991). These let people know about how society is responding and indirectly suggest that everything is under control. The values we should bring to bear on interpreting risk information and evaluating the acceptability of a risk are even more likely to be conveyed implicitly rather than explicitly. When the local paper suggests that the golf course and the shopping center are a good thing, they are conveying social values (with which I may or may not fully agree) – for example, that having a golf course in place of untamed land is an aesthetic

positive and that economic development is always and necessarily a good thing.

## **| Risk and human social values**

Risk is certainly a matter of values. Some years ago I attended a conference on values in agriculture. The conference was held in western Pennsylvania and a field trip was arranged to a local Amish farm. The Amish people, to varying degrees that reflect the preferences of local leaders, reject modern technology (automobiles, tractors, in some cases electricity) but are successful farmers. This particular group of Amish also rejected most scientific medicine, preferring alternatives such as herbal treatments. Someone in our group interested in nutrition asked about their rate of heart disease, given that they reported a fairly high-fat diet. Their answer was that commonly died (presumably of heart disease) in their fifties, they *expected* to die in their fifties, and they felt *God wanted them to die*, in many cases, at about that age, leaving a smaller number of older individuals to lead and teach the next generation. What was the problem? In their view there wasn't one. Even such seemingly basic human desires as wanting to live a long as well as a healthy life, in other words, represent value choices that are not universally shared.

Which risks we find acceptable – or which are preferable to other risks – is largely a question of such value-based choices, not scientific absolutes. Further, there is commonly a large amount of uncertainty about the science behind risk analysis. Nutrition is a good example here, as well. As of this moment, controversy rages over the health effects of low-fat versus low-carbohydrate diets; whether dietary fat and cholesterol are actually the major heart disease ‘culprits’ after all; the scientific (and the political) meaning of the ‘food pyramid’ graphic that the US Department of Agriculture has adopted to stress a grain-based rather than a protein-based diet; the adequacy of food labeling policies for nutritional matters; and the reasons behind the explosion of deadly obesity, perhaps the newest and biggest pandemic in the developed world. Under these circumstances, what scientific truths should people turn to on which to base their day-to-day decisions? In fact it appears that patterns of trust in particular social institutions, institutions that people may feel represent their own worldviews and beliefs, is a better predictor of some risk-related attitudes and choices than scientific knowledge (Priest *et al.* 2003), although scientific knowledge also plays a role (Sturgis and Allum 2004). In situations of uncertainty or controversy, people must decide who to believe. It stands to reason they will tend to believe those they see as sharing their own values.

In addition, not all injuries or deaths are equal, in terms of human values. We may have more sympathy for injury to a child, who has a long life yet to live and does not have much control over external circumstances, than for an adult. Risk to a child can be highly emotional, as when the entire US seemed to hold their breath for days waiting for the 1987 rescue of ‘Baby

Jessica' from the abandoned Texas well into which she had fallen. Other deaths are emotional because of symbolic circumstances, as in the 1999 deaths of 12 Texas A&M University students killed building a giant bonfire in an annual tradition dating from 1909; this event received worldwide media coverage, sympathy and concern, but the deaths of hundreds of other Texas high school students who were killed in highway traffic accidents during that year went largely unnoticed outside their local communities. (In 1997 alone, according to the National Transportation Safety Board, over 800 people were killed in Texas crashes involving drivers age 20 or younger; Hall, 1999.)

## **| Risk and uncertainty**

Risk estimates are often characterized by pervasive uncertainty. Will nuclear power plants destroy us, or save us? Is hormone replacement therapy helpful, or harmful? There is rarely a single 'correct' scientific answer. Sociologist Bruno Latour (1987) has distinguished between 'emerging' or uncertain science, about which scientific and medical consensus has not – or has not yet – emerged, and science that is settled and widely accepted. News accounts, by their nature, are almost always about science that is 'emerging' in this sense. Newsroom values dictate this; it is 'emerging' science that is seen as newsworthy because this is what people are seen as wanting to know about. But in risk reporting this can be a problem. It is difficult enough, after the fact, to say that the use of the pesticide alar on apples, or exposure to airborne SARS virus, or shaking hands with someone with AIDS, or eating British beef *is* or *is not* unreasonably risky. Months or years later, science may have the answer, or at least a partial answer, to these and similar questions, though the definition of 'unreasonably' remains a matter of judgment. But journalists have to live for today, not wait for hindsight or patient research to clear up the confusion.

Scientists, on the other hand, are often reluctant to take positions when the evidence about a risk is still uncertain. Some journalists use a well-known trick in such cases: they ask the scientist about personal involvement with the risk, forcing a subjective decision even in the face of uncertainty. Would you eat the fish, they ask? Would you let your children swim in this lake? Scientists who cannot say for certain what the scientific evidence supports are often willing and able to answer such questions. Like the rest of us, they have to make their own decisions in the face of uncertainty and cannot always wait for all of the evidence to be brought in and evaluated. This is so even though in their role as scientific experts they feel they must be more cautious. But their reluctance to commit to a public position on matters related to risk complicates journalists' task.

## **| Paradoxical probabilities**

In many situations, individual risk and decision making and collective risk and decision-making are not the same. This happens in situations like the so-called ‘tragedy of the commons’ (Harden 1968) in which an environmental resource is shared. In this now-famous example, a group of villagers share a pasture. If each grazes his cow only a certain amount, the pasture will remain healthy. But the temptation is always there for some farmers to graze their cows beyond the share that would be prudent. If only a few farmers do this, there will be a benefit for some and there may not be a problem for everyone, but if everyone thinks that ‘it is only my cow that will get extra the grass’, then the pasture will be ruined and all the farmers – and cows – will suffer. Many other cases of environmental or natural resource threats involve a risk to the individual that may be quite small but a risk to the group that is much more substantive.

A similar but not quite identical case of difference between individual and collective risk is presented by relatively small risks to the individual that represent, in the aggregate, near certainty of at least some harm to some individuals, but (unlike the ‘tragedy’) not necessarily harm to everyone. For example, I could probably get away with not wearing my seatbelt today, but I know with fair certainty that if everyone in the world suddenly stopped wearing seatbelts, a Good number of additional people would be killed or injured. Such behaviours can be managed, although it is not always easy. The idea of not wearing a seatbelt makes people uncomfortable but this is partly because wearing them has become (as a result of deliberate communication campaigns) a social norm, a shared expectation for appropriate behaviour, the violation of which may cause an individual to feel guilty or to be rejected by others. Even ‘bad guys’ in Hollywood movies always buckle on their seat belts before they try a high-speed escape from the police!

A medication that may pose a tiny risk of harm to a given individual may pose a substantial risk that if thousands of people take the drug some of them will almost certainly be harmed. What should news accounts advise people to do? Conversely, a relatively rare disease or condition may strike a small group or ‘cluster’ of people in a given location in a short period of time, as has happened recently for Long Island, New York, women and breast cancer. How many such instances have to occur before the events are considered evidence there is an underlying, non-random cause, even if we have not yet found it? But could this particular risk (while it certainly appears to be statistically ‘real’) receive too much attention in a predominantly middle-class area with active advocacy organizations? How much is ‘too much’? Perhaps this can best be understood in comparison to cases of risks elsewhere, involving different populations, such as an apparent increase in the rate of anencephaly, a fatal birth defect, among Hispanic South Texas babies discovered in 1991 – a problem that might have been attributable to poor nutrition; air or water pollution from local manufacturing or nearby agriculture; upstream Rio Grande River contamination; viral infection;

genetics; or random chance. (The most recent reports, over a decade later, have linked the phenomenon to toxins produced by a corn fungus and consumed in tortillas – Walberg 2004.) How should journalists discuss these events? It is not much of a solution to suggest the news media should only report the ‘facts’ and not give opinions. Whatever they say (or avoid saying) will be influential. And the implied explanations inevitably matter to the political interests of a broad range of stakeholders (including allegedly polluting industries and the makers of suspect chemicals) and advocates. Stereotypes are highly relevant in both cases: poor Mexican women are easily accused of nutritional ignorance; rich New York housewives of being neurotic.

Like all social problems, issues involving risk and its reporting can be analysed in at least three ways, based on three major paradigms in social theory. The first paradigm involves recognition of the role of personal and societal values (not just scientific understanding) in defining which risks we pay attention to and which we do not. The second paradigm involves recognition of the role of social structure and associated institutions and practices (including those of the media themselves) in defining and managing risks. The third paradigm, which I would argue is often less prominent than it deserves to be, involves recognition of the importance of conflict and power in determining who will bear risks and which risks society will choose to address and resolve. Each paradigm has implications for how journalists deal with news of risks.

## **I The risk perception paradigm**

The roots of the idea that human values enter into perceptions of risk are generally attributed to the work of Paul Slovic and others. (Slovic, 2000, reviews this work.) Slovic and his colleagues have demonstrated that a number of psychological factors enter into the perception of risk, in particular the idea of a ‘dread risk’ that poses a threat of death or serious harm to many people at once being less acceptable, psychologically, than something that causes the same number of deaths or harmful events a few at a time. This concept of ‘dread risk’ has become a part of the common language of risk analysis and risk communication specialists. It helped promote the idea that when experts and the lay public disagree, it may not be because valid information is not available to both groups but because they apply different values in its interpretation.

But Slovic’s ideas, as originally put forth, had several limitations. The first was the failure to deal adequately with the relationship between risk ‘perception’ and the ‘actual’ or scientific risk, that is, a hypothetical risk as seen from a probabilistic, scientific perspective (Bradbury, 1989). No definition of risk is completely value-free, so the distinction between ‘actual’ and ‘perceived’ risk sometimes confuses things more than it clarifies them. The term ‘perception’ implies ‘distortion’, and the distinction can also be used

(though, in fairness, not typically by Slovic) to discount popular worries about risks where these reflect value choices or concerns not generally shared with the scientific and medical establishment. On the other hand, this psychometric approach has been very effective in pointing out that public perceptions of risk are not always simply errors in understanding of relevant scientific data but may instead represent ‘rational’ thinking, even where that rationality leads to conclusions that are not based on science.

A second limitation of the original psychometric approach is the fact that risk is not just an individual matter but a collective or social one. Social dynamics cannot be reduced to individual consciousness or individual behaviour. Values do not belong just to individuals in isolation but are closely associated with cultural norms, beliefs, expectations and attitudes, all of which are socially shared. In fact, it is this shared set of values and beliefs that generally defines the identity of a culture, society or smaller social group. Risk perception is like public opinion in the sense that it is a collective perception. Stranded on a desert island, no one could have a ‘public’ opinion; the formation of public opinion depends on knowing something about what others think and situating one’s own position (mentally) among those of others. Similarly, risk perception depends on shared values and how the actions of social institutions with respect to risks are understood – whether the institutions are trusted, whether the risks are fairly or unfairly distributed, whether appropriate actions to reduce or mitigate the risks are being taken by responsible parties, and so on.

The news media have a tremendously important role to play in alerting the public to issues and actions of this kind. Most sources for news stories represent institutions, rather than speaking strictly as individuals; journalists need to recognize the role such sources play in providing media with resources for framing issues and for representing the motivations of social actors in particular ways. Journalism is highly dependent on information subsidies from such sources, especially in technical areas (Gandy 1982). This is unlikely to change; it is institutional sources that will have the most up-to-date technical information and the earliest knowledge of risks. But all institutions are stakeholders in risk-related issues with which they are engaged, and journalists need to understand this.

## **| Social structure and amplification**

Social institutions, in addition to having significant influence over the news media, play other key roles in what has been called the social amplification of risk (see Pidgeon *et al.*, 2003, for discussion). According to this theory, risk can be amplified, meaning made to appear larger, or attenuated, meaning made to appear smaller, because of the actions of various social institutions such as advocacy groups, government agencies, corporations and the news media themselves. This theory is somewhat parallel to agenda-building theory in media studies (Lang and Lang 1983), which states that it is not just

the media that set the political or public agenda but a number of social institutions working in concert. The prominent appearance of an issue (whether about a risk or anything else) in the news media, on the political stage and in public thinking results from a complex social process involving multiple institutions. Risks work the same way as other political issues; their prominence depends on the outcome of complex interactions among a variety of social actors. Multiple institutions, including the less formal organizations characteristic of early stage social movements, determine which risks will be noticed.

Like the psychometric paradigm, this explanation tends to make an unexamined assumption that the process starts with an 'actual risk' that exists before institutions act on it, and then is raised or lowered by the actions of those institutions. Of course, there is rarely a clearly visible 'actual risk' that we can discern without the intervention of social institutions. We can imagine that there might be a hypothetical undistorted risk estimate lurking somewhere just beyond our field of vision, but all of those risk estimates that we can actually come into contact with have been constructed by social actors, usually working within larger institutions – including the institutions of science. And, of course, science itself and its agenda are not value free either, even before political, corporate and advocacy groups add their own spins on the nature and importance of a risk. This is not to say that science is wrong, but neither is it always value free. Journalists must be aware of the institutionally constructed character of risk.

Another problem with amplification theory is that it has not yet reached the stage where it fully explains or predicts how the social system will produce a particular outcome, whether an amplification or an attenuation, of a particular kind of risk. If the risk seems to grow larger as a result of public discussion, the risk has been amplified; if it seems to recede into the distance, it has been attenuated. It is clear that it is not just scientific evidence about the magnitude of a risk that controls this process, but what processes decide which risks behave which way? In order to account for this it is essential to think about the distribution of power in society. Not all social institutions and actors are equal in their ability to influence the course of events. Any risk involves multiple stakeholders, from the scientists, doctors, engineers or risk analysts who first defined the nature of the risk to the various interests who advocate for its being redefined later on.

## **I Stakeholder interests and the social distribution of risk**

The third major social explanation of risk more directly considers the social distribution of risks and the conflicts among stakeholders with different interests and different degrees of power over both how risks are distributed and how they are defined. Insurance companies want safer cars; car manufacturers want to make a profit, though if making safer cars can help them do so they will probably be all for it. Environmental and health advocates

want fewer or safer chemicals to be used in agriculture and manufacturing; farmers and manufacturers again want profits but want to be perceived as socially responsible, if only for business reasons. Minority groups want environmental justice; that is, they want environmental and health risks to be evenly distributed rather than disproportionately burdening lower income, higher minority neighborhoods. Advocates for the elimination of risks caused by particular diseases (muscular dystrophy, for example), social problems (domestic violence, for example), or problematic behaviours (drinking and driving, for example) compete among themselves for the attention of the media, politicians and the public. Public health officials want tobacco use discontinued; tobacco interests lobby for redefining smoking as a 'right' of individuals. The presence and activity of these competing interests is a sign of a healthy pluralistic democracy, but these various groups do not have equal power to determine social outcomes.

Global warming presents a pressing major example of a struggle over the social distribution of risk and of the *costs* or potential consequences if risk becomes reality. Like many environmental issues, global warming as a 'tragedy of the commons' dimension: I can drive my car without causing global warming, but we cannot *all* drive cars without causing global warming. (This assumes for the moment that this is the only cause with which we need to be concerned; of course, the real situation is more complex and industrial activity is another significant source of concern.) At present, people in the richer, more developed countries drive more cars. But everyone will certainly suffer if the globe heats up so much that agricultural productivity is threatened in some areas. In fact the poorer, less-developed countries where the ability of local agriculture to feed the nearby population is less certain and where storage and distribution systems are less efficient will undoubtedly bear a greater share of any eventual costs in terms of widespread food or other shortages. The developed world probably has a better chance to adapt agriculture and certainly has a better food distribution and storage system. Yet international agreements in this area have been difficult to reach because it is exactly the better developed and more powerful nations who would have to alter their practices the most if global warming is to be curbed, and yet who may perceive themselves (accurately or not) to be at lesser risk.

It is easy to think of other examples of unequally distributed risk. Some such differences are natural and not socially determined. It is largely women who fall victim to breast cancer and only men who get prostate cancer, but other risks are distributed in ways that clearly reflect the class structure and ethnic divisions within society. The risk of being a victim of street crime falls disproportionately on minorities and lower income people who must live in higher crime neighbourhoods – the same neighbourhoods where many have claimed toxic waste dumps are more likely to be located. The risk of dying from a preventable disease falls disproportionately on those who cannot afford or have no access to health insurance, including the unemployed and those whose jobs do not provide health benefits. The undereducated are less aware of best practices in prevention of health and the economically

disadvantaged are less able to implement them; what good does it do to be advised to eat lean meat or five servings a day of fresh fruits and vegetables if you cannot afford them? Sugary drinks and deep-fried foods tend to be cheaper. The risks of post-industrial society are not shared equally.

## **I What can journalism provide?**

Journalists need to recognize the social and political character of risk. This means that they must question the purely scientific definitions of a risk and ask themselves who benefits and who loses in a particular risk situation and how particular definitions of the risk may change this equation. They must realize that their own treatment of risks, together with public perceptions that depend on a host of psychological and cultural factors, will contribute to the process through which some risks are addressed and others ignored, with winners and losers among the institutional stakeholders. It is not really enough to say that journalism should report the ‘objective’ facts and let people make up their own minds.

This is not in any way to suggest that science is irrelevant or that journalism should ignore scientific reality. A risk does not go away because people choose not to pay attention to it or do not believe it exists. Smoking, like standing on the tracks in front of a moving train, is a risk no one should be advised to take – or ignore. Risks represent something beyond mere politics; they represent the possibility that real people can really be harmed, sometimes by something that really might have been prevented if the news media had done their job better. Conversely, excessive amplification is a risk in itself, diverting societal resources from other issues and sometimes causing unnecessary anxiety and even more substantive harm. But recognizing the scientific dimensions of a risk, which are themselves socially constructed, is only the beginning.

What is a ‘reasonable’ risk to take, and what is ‘unreasonable’? The answers to these questions are matters of judgment and depend heavily on social values and priorities. These issues should be matters of public debate. It is the journalist’s job to inform and stimulate this debate and to help people identify what is at stake. This debate cannot take place *despite* science, but it must take place *alongside* it. Instead of seeing science as the center of a risk debate and a variety of sociocultural factors as being ‘on the margins’, it might be more useful in many cases to think of society as the centre and science as on the margins – providing input to a debate that takes place among other actors, on other grounds than science itself. Lasswell was right that the media’s role involves more than surveillance. Journalism must also help shape society’s response to identified threats and acknowledge the human social values that are in play in deciding what to do about risks.

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